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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/529,121

10/11/2005

Johannes Antonius Joseph Jacobs

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EXAMINER

GOFF II, JOHN L

ART UNIT

PAPER NUMBER

1791

NOTIFICATION DATE

DELIVERY MODE

06/08/2009

ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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<b>Office Action Summary</b>	<b>Application No.</b> 10/529,121	<b>Applicant(s)</b> JACOBS ET AL.	
	<b>Examiner</b> John L. Goff	<b>Art Unit</b> 1791	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 3/2/09.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 17-19,21-31,33 and 36-40 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 17-19,21-31,33 and 36-40 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 March 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

### **DETAILED ACTION**

1. This action is in response to the amendment filed on 3/2/09.
2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

#### ***Double Patenting***

3. Applicant is advised that should claim 29 be found allowable, claim 30 will be objected to under 37 CFR 1.75 as being a substantial duplicate thereof. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k).

#### ***Claim Rejections - 35 USC § 102/103***

4. Claims 17-19, 21-25, 29-31, 33, and 36-38 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Ferrar et al. (U.S. Patent 5,578,370).

Ferrar teaches reinforcing an article for ballistic purposes by forming a solid woven cloth, tape consisting of a central layer of propylene (greater than 50 wt. % of the tape) sandwiched between two layers of propylene copolymer which two layers have a lower melting point (considered DSC melting point) than the central layer including monoaxially drawing the tape having a stretch ratio of more than 12 and having an E-modulus of at least 5 GPa and applying

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heat and pressure to attach the tape to a surface of a second layer of the same tape, i.e. considered the article (Column 2, lines 39-61 and Column 3, lines 13-19 and Examples 4 and 6). The application of heat and pressure to attach the tape and article meets the limitation of “wherein said tape, film or yarn is attached to said article by means of a heat treatment and/or by applying pressure”.

Regarding the limitation of “i) “said article has been shaped before applying the tape, film or yarn; or ii) said tape, film or yarn has been shaped simultaneously with or before forming the reinforced article”, it is noted that the term “shaped” as claimed does not require any particular shape and does not exclude any shape such as a flat shape. The article inherently is formed having a shape before applying the tape thereby meeting the limitation of “said article has been shaped before applying the tape, film or yarn”. Alternatively, the tape inherently is formed with a shape before forming the reinforced article thereby meeting the limitation of “said tape, film or yarn has been shaped simultaneously with or before forming the reinforced article”. Alternatively, because the reinforced article is formed by applying heat and pressure to the article and tape within a mold or former such that the reinforced article assumes a three-dimensional (Column 3, lines 10-12) shape the limitation of “said article has been shaped before applying the tape, film or yarn” is met when the article is laid up in the mold or former and the limitation of “said tape, film or yarn has been shaped simultaneously with or before forming the reinforced article” is met both when the tape is laid up in the mold or former and when heat and pressure is applied within the mold or former. Furthermore, it would have been to one of ordinary skill in the art at the time the invention was made that forming the reinforced article to have a three-dimensional form by applying heat and pressure to the article and tape within a

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mold or former would have included laying both the article and tape within the mold or former whereby the article and tape are shaped to the mold or former and/or applying heat and pressure to the article and tape shapes both the article and tape to shape of the mold or former whereby the article and tape are shaped simultaneously with forming the reinforced article.

Regarding claim 24, Ferrar is considered to teach monoaxially drawing the tape as there is no specific teaching of drawing the tape in more than one direction. In the event it is shown Ferrar does not necessarily monoaxially draw the tape the following rejection would apply. It would have been obvious to one of ordinary skill in the art at the time the invention was made that drawing the tape as taught by Ferrar would have been understood as monoaxially drawing the tape as Ferrar does not teach any requirement for stretching in more than one direction.

Regarding claim 38, Ferrar teaches stretching the tape to increase its strength. Ferrar teaches as exemplary a stretch ratio of 20 resulting in an E-modulus of at least 5 GPa. However, the stretch ratio and E-modulus are merely exemplary. It would have been obvious to one of ordinary skill in the art at the time the invention was made to stretch the tape as taught by Ferrar to ratios of greater than 20 thereby further increasing the E-modulus to at least 10 GPa as only the expected results of further increasing the strength of the tape would be achieved.

### ***Claim Rejections - 35 USC § 103***

5. Claims 26, 27, and 39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ferrar in view of Cudney et al. (U.S. Patent 5,465,424).

Ferrar is described above in full detail. Ferrar is silent as to applying a covering layer and a layer of foam to the reinforced article, it being noted that while Ferrar teaches the reinforced

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article is used for ballistic purposes Ferrar does not specifically suggest how. Cudney is exemplary of a ballistic article that is wearable including a reinforced tape article wherein applied to the reinforced tape article is a layer of foam and applied to the layer of foam is a covering layer also a surface finish (Figure 14 and Column 3, lines 7-27). It would have been obvious to one of ordinary skill in the art at the time the invention was made to include in Ferrar a covering layer and a layer of foam as shown by Cudney to use the reinforced article in a ballistic article that is wearable.

6. Claims 28 and 40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ferrar and Cudney as applied to claims 26, 27, and 39 above, and further in view of Hallal et al. (U.S. Patent 4,868,040).

Ferrar and Cudney as applied above teach all of the limitations in claims 28 and 40 except for a specific teaching of forming the covering layer from polyethylene, it being noted Cudney is not limited to any particular material other than requiring a flexible fabric. It was well taken in the art that flexible fabrics for use in a ballistic article include polyethylene fabric as evidenced by Hallal (Column 11, lines 31-33). It would have been obvious to one of ordinary skill in the art at the time the invention was made to form the flexible fabric covering layer taught by Ferrar as modified by Cudney from polyethylene a known suitable material as shown by Hallal only the expected results being achieved.

### ***Response to Arguments***

7. Applicant's arguments with respect to claims 17-19, 21-31, 33, and 36-40 have been considered but are moot in view of the new ground(s) of rejection.

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Applicants argue, “Ferrar et al. describes a method of producing a thermoplastic composite material, wherein mutually elongated thermoplastic elements are used to form a mat. A plurality of mats can be superimposed on each other and fused together to form a layered structure, see claim 28. In other words, the elements are incorporated into a material that is subsequently formed into a shaped article. This is in contrast to the present invention which allows the application at the surface of an article that already has been shaped before application of the tape, film or yarn, or the tape, film or yarn has been shaped simultaneously with or before forming the article, hence the term “reinforcing”.”.

It is noted that the term “shaped” as claimed does not require any particular shape and does not exclude any shape such as a flat shape. Ferrar meets the claim limitation as more fully set forth in the rejection above.

Applicants further argue, “The present invention is also non-obvious for the following reasons. Ferrar et al. does not suggest that attaching the tape, film or yarn of thermoplastic polymer to the surface of an article may provide for the reinforcing effect that is the subject of the present invention and which is evidenced in the present application.”.

Attaching the tape to the article as taught by Ferrar forms a reinforced article.

Applicants further argue, “In addition, the present invention provides for further advantages, such as the possibility to use a material that comprises a central layer and an outer layer, wherein these layers are of the same class of material. This facilitates recycling of the material. This is not disclosed or suggested in the prior art.”.

Because the tape and the article are formed of the same materials these layers are of the same class of materials. The claims do not require recycling the material.

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***Conclusion***

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **John L. Goff** whose telephone number is **(571)272-1216**. The examiner can normally be reached on M-F (7:15 AM - 3:45 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Crispino can be reached on (571) 272-1226. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.



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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/John L. Goff/  
Primary Examiner, Art Unit 1791